

The Kimock et al. reference does not meet the limitation present in Applicants' claims reciting that the substrate contains "an exterior coating of a continuous silicon oxynitride...etc."

The Examiner contends at pages 2 through 3 of the Official Action, the Kimock et al reference teaches "the silicon oxynitride as an outer external layer" in Example AA. The purpose in filing this Supplemental Amendment is to refute this assertion.

Column 7, line 50 of Kimock et al. states:

*"Most preferably, interlayer 2 is composed of silicon oxynitride. In no case would the low friction layer 32 and the interlayer 2 which is bonded directly to low friction layer 3 be of the same material."*

Applicants reiterate that the objective of Kimock et al. is to obtain a low friction material as the outer coating on the layered article.

Kimock et al. teach away from Applicants' invention. Kimock et al. teach silicon oxynitride as an adhesion mediating layer (i.e., an intermediate), not as an outer layer per se, or an outer layer exposed to environmental wear as claimed by Applicants.

The Examiner in the Official Action has applied Example AA from the Kimock et al. disclosure for the proposition that it discloses silicon oxynitride as an outer layer. This assertion is incorrect. Example AA does disclose the production of an article. However, this article so produced is an intermediate article; it is not a useful article of commerce as is shown by Kimock. This conclusion is supported by carefully reading the cited Example AA, Example BB and Column 21.

Example AA utilizes 4 pieces of tempered float glass for use in laser bar scanners. These were surface cleaned and exposed in a vacuum to SiO<sub>2</sub> deposited by reactive ion beam sputter deposition. Then the coated plates were contacted with silicon oxynitride in the vacuum chamber. The plates were removed then from the vacuum chamber and Kimock et al. describe the properties of the articles, (i.e. Vickers microhardness, Vickers hardness, etc.).

The ultimate and penultimate sentences in Example AA are very important with respect to what Kimock et al. are teaching. They state at that location:

*“After being rubbed with a sharp piece of glass the coating exhibited many optical imperfections and defects, indicative of damage induced by galling or glass ‘welding’ to the coating surface. The sliding friction between the sharp glass and the silicon-oxynitride coated substrate was very high.”*

This Example AA does no more than disclose an intermediate product. This intermediate product is then used as the starting material in Example BB. The quoted excerpt immediately above from Kimock et al. clearly shows that the article so produced in Example AA is not suitable for use as a finished product where they point out the deficiencies thereof. Note that in Example BB the starting article, obtained from Example AA (that is described as having optical imperfections after being rubbed and has a high sliding friction) “has a low friction zirconium oxide layer applied as a top coating to the coated glass plates from Example AA.” Thus Examples AA and BB must be considered in their entireties, as Example AA by itself is not suitable for the use desired by Kimock et al. It does not satisfy their objective. Note that Kimock et al. state at column 3, lines 4 - 6 that “the invention.. provides a coating of low friction...material.” The emphasis is on “low friction” as that feature is what they want to achieve in their product. They do not achieve “low friction” in their product from Example AA (“The sliding friction between the sharp glass and the silicon-oxynitride coated substrate was very high.”). Example AA thus clearly teaches away from the use of the silicon oxynitride as the outer or external coating. In fact according to Kimock et al., Applicants’ use of the silicon

oxynitride as the external coating is inappropriate. Thus Applicants obtain an unexpected result, which is one of the hallmarks of “invention.”

Many of these arguments were presented in the prior response. Applicants submit that these same arguments are in fact supported clearly by Kimock et al. themselves in their disclosure found in the specification at column 21 lines 4 to 29 which summarizes the objective of the invention. The section totally and completely refutes the Examiner's contention that AA is an “outer external layer.”

Column 21 lines 4... states:

*Specific examples of the use of thick interlayers with thin optically transparent hard and low friction of zirconium oxide, aluminum oxide and boron nitride, and substantially optically transparent hard and low friction layers of carbon nitride and indium tin oxide are provided in Examples BB, CC, EE, DD and FF, respectively. In each of these examples, glass substrates were coated with a first interlayer of silicon dioxide and silicon nitride (so called “silicon oxynitride”) and finally a top layer of optically transparent or substantially optically transparent hard and low friction material. The coated substrate product in each of these Examples BB, CC, EE, DD, and FF is a laser bar code scanner window.*

At Col 21 line 18, the patentees continue:

*“Example AA illustrates that a hard thick silicon oxynitride coating alone is not sufficient to produce an abrasion resistant coating on glass laser bar code scanner windows. This is because although silicon oxynitride is very hard it does not exhibit a low coefficient of friction against glass.”*

Example AA on its own is vague unless it is considered in conjunction with why the aspect of optical imperfections is important. Column 21 explains why as it the objective of Kimock et al. to have (to need) a smooth outer covering layer.

The inconsistencies between what Kimock et al. teach and what Applicants claim provide the

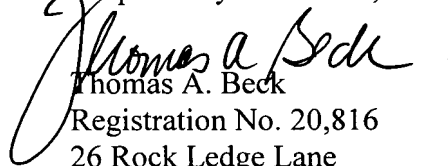
basis for the assertion by Applicants there is not anticipation of Applicants claimed structure as a matter of law.

Claims 10 and 11 are not anticipated as they also recite that the layer is exposed to "environmental wear" much like the limitations found in claims 1 and 9 which cover "an exterior layer."

In view of the arguments and modifications to the claims, allowance of this case is warranted. Such favorable action is respectfully solicited. Applicants have attempted to comply with the Examiner's suggestions to place the case into condition for allowance of the claims. If, in the opinion of the Examiner, additional or modified language is needed to succeed in this respect, the Examiner is respectfully requested to contact Applicant's attorney by telephone at the number listed below to resolve any outstanding issues.

If the claims are not in condition for allowance by virtue of the arguments submitted herein and in the prior amendment filed, and since the above-identified application will be abandoned without further action by Applicants, Applicants filed a Notice of Appeal to the Board of Appeals and Interferences appealing the final rejection of the claims in the above-identified Examiner's action. A requested extension of time of two months within which to respond was also requested. Please charge deposit Account 02-1651 for any charge necessary to extend the time and/or to appeal this case.

Respectfully Submitted,

  
Thomas A. Beck  
Registration No. 20,816  
26 Rock Ledge Lane  
New Milford, CT 06776  
Telephone (860) 354-0892

I hereby certify that this paper is being deposited on the date indicated below with the U.S. Postal Service as First Class Mail addressed to Commissioner of Patents & Trademarks, Washington, D.C. 20231

Signature: \_\_\_\_\_

*Thomas A. Beck*

Date: October 31, 2000

Name: \_\_\_\_\_

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